

"we consider that the international character of the diagnosis will better be maintained if the Vienna rule be altered so as to read 'either a diagnosis in Latin or a recognisable figure.' This alternative would do away with the difficulty as to language, and would allow botanists to use their own language, provided they give a characteristic figure."

Prof. Seward has signed the second statement, and has added the following remarks:—"In view of the nature of much of the material available for investigation, I consider that it is undesirable to insist on a Latin diagnosis for all species described by palaeobotanists. In cases where a formal diagnosis is possible, such diagnosis and a figure of the specimen ought to be given, but for the present at least I am not disposed to bind myself to the publication of a diagnosis in Latin. It is, I believe, in the interests of the subject to avoid pledging oneself to any fixed rule as regards either a diagnosis or the language in which the diagnosis is to be written.—A. C. Seward."

Prof. Zeiller, of Paris, to whom a copy of the memorandum was forwarded, has signed the second statement mentioned above, and has kindly expressed his reasons for being unable to subscribe to the first. These are as follows:—

"M'étant, au Congrès de Bruxelles, rallié, dans un esprit de conciliation, à la disposition générale qui fait de la diagnose latine une obligation, je n'en persiste pas moins à penser que cette obligation ne devrait pas être étendue à la paléobotanique, l'application s'en heurtant souvent, avec l'état fragmentaire et incomplet des fossiles végétaux, à des difficultés presque insurmontables, notamment lorsqu'il s'agit d'échantillons à structure conservée ne montrant que des caractères anatomiques internes.

"J'émet le vœu que tous les paléobotanistes s'unissent pour demander au prochain Congrès de leur laisser à cet égard la liberté dont ils avaient joui jusqu'ici, et à l'encontre de laquelle on n'a relevé aucun inconvenienc.—R. Zeiller."

In conclusion, while, as we have seen, the British, American, and Scandinavian palaeobotanists have agreed to avoid the *general* use of Latin diagnoses for the present, it should be pointed out that the object of the memorandum mentioned above has been solely to ascertain the opinions and *present* intentions of workers on fossil plants in this respect. It is, of course, understood that those who have subscribed to the two statements quoted above are not in any way bound as to the future, and they are at perfect liberty if, in altered circumstances in the future, they should wish to depart from their present opinions and intentions to do so. The view is widely held that perfect liberty in regard to matters of nomenclature, as in other directions, is essential to the progress of our knowledge of fossil plants.

E. A. NEWELL ARBER.

The Sedgwick Museum, Cambridge.

Spitting Cobras.

THE following note may be of interest, the more so as the existence of cobras in Borneo is denied in a recent work on Borneo ("Seventeen Years among the Sea Dyaks"). In your "Notes" in NATURE of May 4 (p. 320) you refer to the "spitting cobras" of East Africa. The cobra of East Borneo also has the power of projecting its poison to a distance of at least 1 metre. In January of last year I was walking along a narrow jungle track about twenty miles from the coast, in lat. 1° 10' S., when I saw a cobra erect preparing to strike at me. I struck it about 30 cm. from the head and broke its back (as I thought). It then projected two streams of liquid at me as I stood over it. A Bugis close beside me exclaimed, "dia menumpit!" (menumpit=to shoot with the blow-pipe). One stream struck the lapel of my coat, but I did not notice where the other struck. I placed the dead (?) cobra on a tree, intending on my return to carry it to my camp and bottle it, but when I returned it was gone.

About two hours after the incident I felt an irritation on my skin, which lasted for some hours, and then gradually disappeared. There was a newly healed leech wound at the place, but I could hardly believe that the cobra venom could have penetrated thick puttees, trousers, and

socks all wet through. But I sent for the Bugis who had accompanied me, and without telling him anything, asked him to point out where the cobra poison had struck me. He immediately placed one finger on the lapel of my coat and another on my shin exactly where the irritation was.

He added that about ten miles away his brother had lost the use of his arm for three months because of a cobra which had projected its poison at him.

The cobra was black with a bluish sheen, but the throat was yellow. Estimated length, 1600 mm.

Boscombe, May 8.

T. R. H. GARRETT.

The Reform of the Calendar.

THE article in this week's NATURE on "Daylight and Darkness" leaves little to be said with regard to the so-called Daylight Saving Bill. Its adoption would indeed render us "the laughing-stock of the enlightened people of the world." No object, however good in itself, can be attained by a deceitful and underhand process, which must lead to many inconsistencies and misunderstandings. There is no reason why 12 o'clock should be the exact time of noon; in point of fact, it seldom is, as clocks must be regulated to keep *mean* time. But there is a very good reason, and it is of great importance, that the interval between two consecutive hours by the clock should be always exactly one hour. To regulate it otherwise would be deceitful and confusing.

My purpose, however, in this letter is rather with reference to Mr. Philip's letter on the "Reform of the Calendar." He denies that the week has had an unbroken continuance, because the paschal full moon on A.D. 31 (which he thinks was the year of the Crucifixion) fell on March 27, which was a Tuesday. Now the Jewish Passover had nothing to do with the day of the week, and might fall on any day, being regulated by the moon. That it fell in A.D. 31 on a Tuesday proves that that could not have been the year of the Crucifixion, which was probably A.D. 30, or possibly (as Prof. Sanday now thinks) A.D. 29. The seventh day of the week (the Jewish Sabbath) was the day after the Crucifixion, and the day after that, the first day of the week, the day of the Resurrection. Christians observed that day as their sacred day every week, and the Church decided (after the early Quartodeciman controversy, settled by the Council of Nicæa) to keep the Christian Passover (which we call Easter) always on that day of the week. There has, then, never been any break in the continuity of the week.

Blackheath, May 13.

W. T. LYNN.

The Rusting of Iron.

IN view of the correspondence which has taken place recently in NATURE on this subject, I should like to refer to the results of some further investigations which I have made in conjunction with Mr. J. R. Hill in continuation of those published in the Journal of the Chemical Society in 1905. In that paper, and in other previous publications, experimental evidence was brought forward to show that the rusting of iron can take place in the absence of carbon dioxide, contrary to the generally accepted view. Several chemists have addressed themselves to the task of defending the old opinion that carbon dioxide is necessary. Their arguments were summarised recently in an article in NATURE intituled "T. M. L." No exception can be taken to this article if its limitations are clearly recognised. It omits all reference to the large body of experimental work which has been published by Whitney, Tilden and others, in addition to myself, to show that the old view must be abandoned. The most recent work of Lambert and Thomson confirms this conclusion, whilst making an important addition to our knowledge of the conditions of reaction between iron, oxygen, and water when brought together in the most highly purified forms.

My object in writing this note is to state that I have now ascertained the cause of the inhibiting effect which certain substances, including alkalis and potassium bichromate, exert in preventing the rusting of iron, and it therefore becomes possible to explain a number of facts, including certain results which have been held to prove that carbon dioxide is a necessary factor in rusting.

It is now clear that all those agents which inhibit the rusting of iron (see *Journ. Chem. Soc.*, 1905) also render the iron "passive" to a greater or less extent, and that this passivity of iron persists after the metal has been removed from the effective solution. Iron which has been immersed in alkalis or in a solution of potassium bichromate is found still to be passive after careful washing with water, that is, after removal of all trace of the solution which produced the effect. The iron is no longer attacked by nitric acid of a certain strength or by the appropriate solution of copper sulphate, nor does it "rust" in presence of oxygen and water. Contact with certain substances, especially dilute acids, including carbonic acid, at once destroys the passivity, and the iron becomes active again in all respects. A full account of this work and of its bearings will shortly be given.

The fact alluded to in recent correspondence, that an iron cylinder which has been immersed in potash solution and afterwards washed with water will not rust in air until carbon dioxide is admitted, does not prove that carbon dioxide is necessary for rusting. The observed facts are due, first, to the passivity of the iron induced by the alkali, and, secondly, to the destruction of this passivity by the carbon dioxide. The same piece of iron will rust freely in air deprived of carbon dioxide, provided that it has not been in contact with alkali of such a strength as will induce passivity.

May 9.

WYNDHAM R. DUNSTAN.

SCIENCE AND THE IMPERIAL CONFERENCE.

SUCH words as Empire and Imperial, like many others, suffer some disadvantage from their historical antecedents. Looked at in the past they recall something Roman, something Napoleonic; the rule of dependent peoples, conquered by the sword, and governed, not wholly inefficiently, but without much say in the matter, by military power. Looked at in the present and with a scientific eye, the British Empire reveals itself as something fundamentally different. It is simply the last term of social aggregation. Free peoples, starting from the family, aggregate themselves into larger and larger groups, and the common freedom is maintained by the naval supremacy of the mother-country. The Crown consecrates the unity of the whole.

Every stage of aggregation in such a system has its common interests which require concerted action. The recognition of this inevitably leads to some sort of what Herbert Spencer would have called physiological integration in which the whole is greater, or at any rate more efficient, than the sum of its parts. The Imperial Conference, which is about to meet, has come into existence just as naturally as a municipality or a county council. The essential principle is the same: the scope of its deliberation will only extend to larger problems.

Such problems will be matters of high policy, and though it may be hoped that they will be dealt with in a scientific spirit, it is improbable that the direct interests of knowledge will for the moment find a place amongst them. But the principle of Imperial Conference, which happily there is every reason to regard as permanently established, has already received a development in a more detailed direction. The Imperial Education Conference, which held its last public sitting on April 28, has now received Government recognition, though its first meeting in 1907 was the result of unofficial initiative. It is not improbable that its example may be followed on behalf of other interests of no less importance.

Knowledge in a logical order would come before education. But the machinery of an Imperial Conference would probably not be very helpful to the pro-

gress of science in the abstract, as that cannot be earmarked to any nationality. The scientific study of the Empire itself is a field in which that machinery could find employment with results of the most profound scientific interest and the greatest practical utility.

Looking at the magnitude of the Empire, nothing is more remarkable than the feeble interest it excites in the mind of the average citizen. His horizon is rarely more than parochial, and the only imperial problem on which he probably has a distinct conviction is the necessity of maintaining our naval supremacy. It is something that in a vague way he should wish it to be maintained. But what the Empire is, or what are its future possibilities, he neither knows nor cares. In this he is hardly to be blamed. He was taught in his youth, as we may learn from the "Reminiscences of Goldwin Smith," that Colonies were a source of weakness, and we may learn from the same authority that half a century ago even the Colonial Office was animated with the idea of getting rid of them decently. If, since that day, opinion has changed to acquiescence in the existence of Empire, it is due to the influence and advantages of a peaceful commerce. Perhaps in generations to come it may excite a livelier enthusiasm.

A common attack, such as a conference might stimulate, on scientific problems, might do something to bring this about. There is no suggestion that science should be centred in the home-country. The dominions have their own scientific activity, and the ranks of the Royal Society are open to their workers. The problems that demand cooperation are not local but far extending, even cosmical.

Our Admiralty has charted the shores frequented by our shipping, and the world's navigation has the benefit. The international recognition of the meridian of Greenwich is our reward. But though the *Challenger* expedition made a noble beginning, a thorough exploration of ocean depths still remains to be accomplished, and is a task which naturally falls to a maritime race. But the land cries out to be accurately mapped. Both Africa and Australia have suffered from using imperfectly determined meridians of longitude as boundaries. The accurate determination of the position of salient points throughout the Empire would alone be a sufficient subject for a conference. Were this accomplished local surveys would start from a sound basis in filling up the details. As it is, even the survey of the United Kingdom is not absolutely coordinated with that of the continent. Such an enterprise as that of Sir David Gill in measuring an arc of the meridian from the Cape to the northern hemisphere would not be left to private initiative.

If the topography of vast territories is still imperfectly known, their geology is practically untouched. Africa differs from neighbouring continents in being all but an island. It seems to be the part of the earth's surface which has been least disturbed by volcanic action. It has preserved a structure of great antiquity. Thoroughly understood, it would throw light on an early chapter of the history of the earth.

In the southern hemisphere British maritime activity is dominant. A knowledge of the meteorology of its oceans is a necessary condition of their secure navigation. Sir Charles Bruce, in his "Broad Stone of Empire," has given a striking account of what has been accomplished towards it by the Mauritius Meteorological Observatory. Such a measure of undoubted success should stimulate further endeavour and the provision of other stations. It ought to be possible to predict the disastrous droughts of India